

Application No.: 10/524,203
Amendment Dated: November 3, 2009
Reply to Office Action of: August 28, 2009

MAT-8657US

Amendments to the Drawings:

The attached drawing sheet includes a change to Figure 5. This sheet replaces the original sheet.

Attachment

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Remarks/Arguments:

Claims 1-10 are pending and rejected in the application. Claims 7, 8 and 10 have been amended. Claim 11 has been newly added. No new matter has been added.

On page 2, the Official Action objects to claim 7 due to informalities. Applicants have amended claim 7 to depend on claim 2 (which includes a frequency converter). Thus, claim 7 now has proper antecedent basis for "the frequency converter." Withdrawal of the objection is respectfully requested.

On page 3, the Official Action rejects claims 1-10 under 35 U.S.C. § 103(a) as being unpatentable over Applicants' admitted prior art (AAPA) in view of Paneth (U.S. 4,862,107). It is respectfully submitted, however, that the claims are patentable over the art of record for at least the reasons set forth below.

... a base band transform circuit for converting a first high frequency signal with digital modulation into a base band signal with using the first reference signal ...

Claim 1 relates to a base band transformation circuit which utilizes the reference signal to convert the high frequency signal into a base band signal. This feature is at least supported on pages 3 and 4 of the specification and furthermore in Figs. 1, 2 and 3. No new matter has been added.

On page 3, the Official Action relies on element 108 in Fig. 5 of AAPA to suggest the base band transform circuit recited in claim 1. However, element 108 in Fig. 5 was incorrectly labeled as "base band orthogonal transform circuit." As supported on page 1 of Applicants' specification, element 108 is actually a frequency converter, and not a base band orthogonal transform circuit (*"the reference signal is input to frequency converters 102 and 108 for converting this signal into signals of predetermined frequencies"*). Applicants have now correctly labeled element 108 in Fig. 5 as a "frequency converter." Thus, the Examiner can no longer rely on element 108 in Fig. 5 of AAPA to suggest a base band orthogonal transform circuit.

Applicants' claim 1 is different than the art of record, because of the base band orthogonal transform circuit which utilizes the reference signal to convert the high frequency signals to base band signals (*"a base band transform circuit for converting a first high frequency signal with digital modulation into a base band signal with using the first reference signal"*).

As shown in at least Applicants' Fig. 1, the base band orthogonal transform circuit receives the high frequency signal from frequency converter 2 and the reference signal from reference signal generator 1. Thus, base band orthogonal transform circuit converts the high frequency signal into base band in-phase and quadrature components (14 and 15) using the reference signal. Fig. 2 furthermore shows the details of base band orthogonal transform circuit. This feature is also supported on pages 3 and 4 of the specification (*"base band orthogonal transform circuit 3 converts a frequency of the intermediate frequency signal output from frequency converter 2 into base band orthogonal signals including base band I signal 14 and base band Q signal 15 with using the reference signal generated by reference signal generator 1"*). Accordingly, for the reasons set forth above, claim 1 is patentable over the art of record.

Claims 2-11 include all of the features of claim 1 from which they depend. Thus, claims 2-11 are also patentable over the art of record for at least the reasons set forth above with respect to claim 1.

Specifically, claims 7, 8, 10 and 11 now recite configurations wherein the base band transform circuit, frequency converter, digital demodulator and frequency divider are formed in a bi-CMOS device and a CMOS device. These features are at least supported on page 4 of the specification and furthermore in Figs. 4A and 4B (*"base band orthogonal transform circuit 3 and frequency divider 4 may be formed in a single device 21 by a CMOS process. Frequency converter 2, base band orthogonal transform circuit 3, and frequency divider 4 may be formed in a single device 22 by a high frequency bi-CMOS process, hence allowing frequency converter 2, base band orthogonal transform circuit 3 and frequency divider 4 to operate at high frequencies with a small current"*). Thus, claims 7, 8, 10 and new claim 11 include features which are neither disclosed in AAPA nor Paneth.

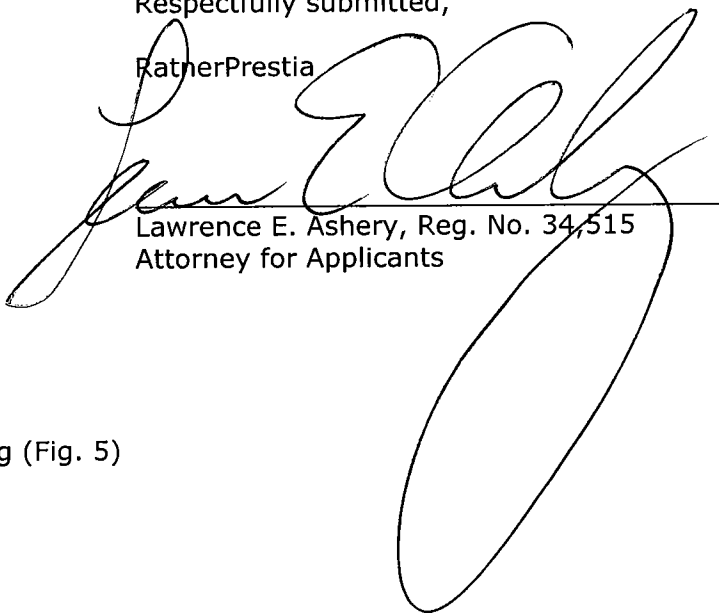
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In view of the arguments set forth above, the above identified application is in condition for allowance which action is respectfully requested.

Respectfully submitted,

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RAE/sh

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Enclosure: Replacement Drawing (Fig. 5)

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